TUBERCULOSIS ON MAUI

By DR. W. D. BALDWIN

In a sense it is perhaps fortunate that we do not and cannot realize the appalling loss of life due to tuberculosis for if we did we would be in a continuous state of hysteria or depression.

When a cholera epidemic breaks out it naturally arouses dread and terror in a community; so also small pox and other epidemics. Why? Because of the suddenness of the attack—it is almost sudden death, which is so shocking to our sensibilities. A person is well one day, and a few days later is dead! The result is the health authorities, or the community itself, organizes (as it certainly should), and regulations are passed, action is taken and the epidemic is stamped out. But in the case of tuberculosis the disease usually works slowly and insidiously and therefore it is very difficult to realize its terrible ravages. One case of acute tuberculosis (called galloping consumption), which causes death within a very few weeks, will make more impression on a community than a hundred of the ordinary cases that drag out for perhaps five years. Such is human nature! I will not go into statistics, but perhaps the prevalence of this disease can be pictured to the mind when I say that it has been estimated that in Great Britain the average number of deaths for each year of the war from direct war-causes, (bullets, so to speak) was only two and a quarter times the number of deaths from Tuberculosis in the same country for the year 1916.

Figures Deceptive

But statistics are often misleading. Several years ago the Palama Settlement began their splendid anti-tuberculosis campaign; and the public naturally expected to see immediate and startling results. After a year or two had gone by one of the trustees called my attention to the official board of health figures which showed that instead of a decrease in number of recorded deaths from tuberculosis per 1000 inhabitants there was actually an increase. He was troubled, and so was I, until I thought of an almost obvious explanation (which I still believe to be the true one), namely, that doctors, being human and not always infallible, sometimes, when signing a death certificate, will wonder for a moment what they should put down as the cause of death. Now if much is being said and written about tuberculosis, then naturally, in a case of doubt, that diagnosis suggests itself much more often than when there is no community interest in the subject. Also, with more general interest, and with district nurses ferriting out the cases, a great many more cases are bound to be correctly diagnosed as tuberculosis than formerly when they would have died in obscurity and been designated on the certificate as dying from "old age" or some other indefinite causation.

The board of health records for the territory show that during the past three years the death rate from tuberculosis has increased, especially during the year ending June 30, 1920 when it went to 2.0 per 1000 inhabitants as compared to an average during the previous eight years of nearly 1.75. On the other hand, the number of registered living cases for the year ending June 30, 1920 was 944 as compared to 1168 registered during the previous year. Dr. Trotter attributes the increased death rate as due to the prevalence of influenza.

Conditions Induce Disease

The most ideal conditions for the high incidence of tuberculosis obtain where there is poverty coupled with crowded living quarters. In the big cities of Japan, tuberculosis has been greatly on the increase, the reason being that this nation has been changing too rapidly from a farming to a great manufacturing people. The factory hands are poorly housed and poorly paid. They therefore do not have adequate fresh air, are underfed and over-worked. An intelligent Japanese guide once likened Tokio to me to a great vortex into which the healthy country people entered, became swallowed up, and died. We may take such manufacturing cities as exist today in Japan as typical of the most suitable conditions that can exist for the spread of tuberculosis.

Now let us turn to the opposite picture, namely to the places and conditions of life that are safest from the standpoint of escaping the disease. One naturally thinks immediately of some isolated region with a glorious climate, like the crater of Haleakala. This is probably true if one was born there and stayed there, but, as I pointed out in another paper, those who are brought up in isolated regions are in great danger when they change to city life of contracting a deadly and rapidly fatal form of tuberculosis, for the reason that during childhood they have not received the usual small inoculations of the disease; they have not, as it were been vaccinated against the disease. The great majority of people live in villages, towns, and cities, and a very large percentage of such people receive this childhood inoculation which produces a partial immunity—only partial but very important. Now taking this normal life under civilized conditions, what particular place would you select as being the safest place to live in if you wished above all things to avoid tuberculosis? I think that not in a hundred guesses would you think of the place in my own mind. The answer is, a well-conducted Tuberculosis Sanitarium. The great Dr. Osler used frequently to make this claim to his students, and recently Dr. Markus Patterson, one of the ablest of the English authorities, speaking from many years of personal experience as Superintendent of the Bromptom Hospital Sanitorium of Frimley, makes the same assertion. (These men refer, of course, particularly to the nurses, doctors and non-tuberculous help in sanitoria.) When making the above astonishing claim, personally I would exclude infants as they have no acquired immunity; to be exact. I would exclude children up to the age of five. I think that statistics will bear out this statement. In explaining the reason for this strange fact, one authority would lay particular stress on the point that in a well-conducted sanitorium the infective agent (the tuberculosis bacillus) is destroyed; that is to say, each patient has a sputum cup and is allowed to expectorate only in the cup, and the contents is not allowed to dry and disseminate—as is the case usually with home patients—but is thoroughly disinfected. Another authority would explain it principally by the fact that in such an institution there is plenty of fresh air, good nourishing food, etc. —in other words, the same factors that obtain for the purpose of curing the patients also act as preventatives for those who are not patients. Personally, although I believe that scrupulous care should be observed in the disposal of the sputum and in general cleanliness and that this is very important, yet I think that the chief explaination for the comparative safety of good sanitoria can be found in the general conditions of health in such institutions—that is, fresh air good food, a generally healthful life with sufficient exercise but without exhausting labor. If we could all have the living conditions that the attendents of well-conducted sanitoria enjoy the drop in the incidence of tuberculosis would be enormous. In this consideration, climate is not one of the principle things; in fact, contrary to popular opinion, it is the least important of all. Both in the cure in sanitoria, and the prevention of the disease, climate cuts a very small figure. Here in the Islands, however, probably a climate, such as that of Kula, does have considerable influence both in the cure and the prevention of the disease. At near sea-level our climate is generally more or less enervating; it is not that it is too hot, but too even—little difference in temperture between summer and winter, and, much more important, little difference between the day and night, temperature; whereas in Kula and all our higher altitudes there is a marked difference between the temperature of day and night. This is stimulating and healthful and is the main feature in climate that is recognized as being beneficial for the tuberculous patient; certainly those who live at our higher altitudes are generally rosier and healthier than those who live near sea level, which should mean that they are not prone to succomb to the disease. As regards humidity, the popular belief that a dry climate is beneficial porbably has no foundation in fact. A patient in a good sanitorium in dry Colorado has no better chance than a patient, in an equally good sanitorium, in moist England.

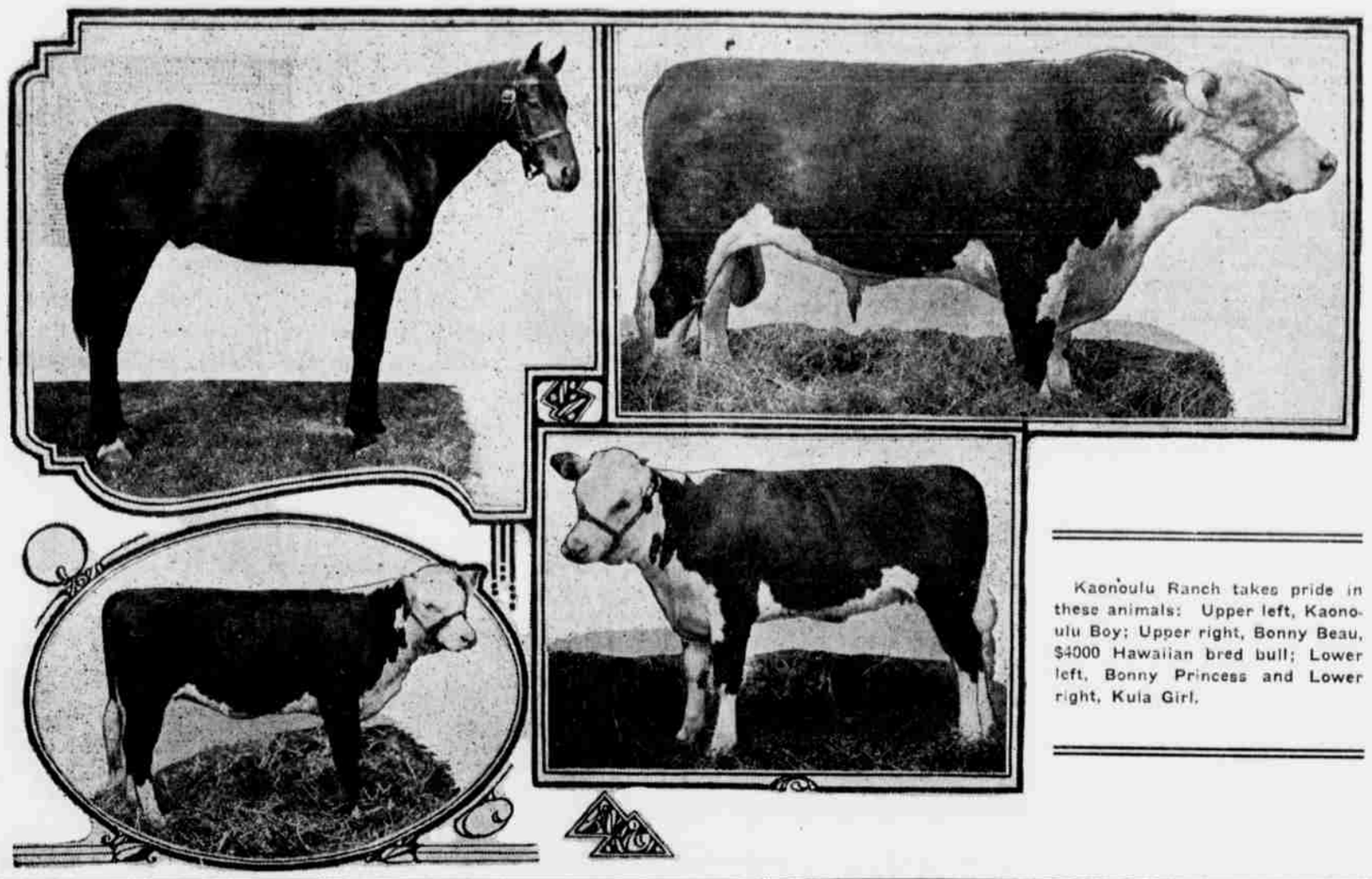
Types of Bacilli

The causitive agent of the disease is, as you all know, the bacillus tuberculosis. In human tuberculosis there are two varieties of this bacillus; the human type, found in tuberculosis sputum; and the bovine type, which commonly affects cattle, and which is found in milk (and its products, such as butter and cheese) from tuberculous cows. But while this bovine form plays a minor role as regards pulmonary turebculosis yet many regard it as the prime factor in immunizing the human race against the more deadly human form of bacillus. In other words, during childhood we drink milk or eat butter that is infected with this germ; from the elimentary canal these germs make their way to the glands of the chest or elsewhere; they become lodged there, multiply, and develop tuberculous tissue; as a rule these tuberculous glands cause no symptoms whatever and instead produce a beneficial reaction, giving us a partial immunity against the more virulent human type of bacillus that commonly attacks the lungs. A few even go so far therefore as to argue that tuberculous milk is really a blessing in disguise to the human race. Perhaps it would be a blessing if we could regulate the dose so that we would never have more than a very minute dose, but as this is impossible I think it far safer to continue the excellent work inaugurated by the late Dr. Norgaard in the Islands in the line of eradicating tuberculous cows from our dairies. This natural method of vaccinating by way of drinking infected milk is too dangerous; but it suggests that possibly some day an immunity may be artificially produced by the injection of very weak strains of tubercle bacilli.

Destroying the Germs

Tuberculosis of the lungs is nearly always caused by the human type of bacillus; this bacillus is sometimes found in foecal excreta, but, practically speaking, we may think of it as being only in sputum from tuberculous patients. The subject of sputum is an exceedingly disagreeable, almost nauseating, one to think about, but we must, face disagreeable things if we are to make headway against this disease. It is tragic that the infective material for the spread of this disease should be such a disgusting substance as sputum; the tragedy comes home to the patient when he observes

(Continued on Page 4.)



Kaonoulu Ranch takes pride in these animals: Upper left, Kaonoulu Boy; Upper right, Bonny Beau, $4000 Hawaiian bred bull; Lower left, Bonny Princess and Lower right, Kula Girl.